

# *Sphingomonas paucimobilis* Bloodstream Infections Associated with Contaminated Intravenous Fentanyl<sup>1</sup>

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## CME ACTIVITY

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### Learning Objectives

Upon completion of this activity, participants will be able to:

- Describe the types of bacterial contamination associated with different compounding pharmacy medications.
- Describe the features of *Sphingomonas paucimobilis* bacteria.
- Identify the types of exposure associated with transmission of *S. paucimobilis* infection with contaminated fentanyl.
- Describe a strategy that would limit the occurrence of compounding pharmacy product contamination.

### Editor

**Lynne Stockton**, Copy Editor, *Emerging Infectious Diseases*. *Disclosure: Lynne Stockton has disclosed no relevant financial relationships.*

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Nationally distributed medications from compounding pharmacies, which typically adhere to less stringent quality-control standards than pharmaceutical manufacturers, can lead to multistate outbreaks. We investigated a cluster of 6 patients in a Maryland hospital who had *Sphingomonas paucimobilis* bloodstream infections in November 2007. Of the 6 case-patients, 5 (83%) had received intravenous fen-

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tanyl within 48 hours before bacteremia developed. Cultures of unopened samples of fentanyl grew *S. paucimobilis*; the pulsed-field gel electrophoresis pattern was indistinguishable from that of the isolates of 5 case-patients. The contaminated fentanyl lot had been prepared at a compounding pharmacy and distributed to 4 states. Subsequently, in California, *S. paucimobilis* bacteremia was diagnosed for 2 patients who had received intravenous fentanyl from the same compounding pharmacy. These pharmacies should adopt more stringent quality-control measures, including prerelease product testing, when compounding and distributing large quantities of sterile preparations.

<sup>1</sup>Data presented in part at the 18th Annual Meeting of the Society for Healthcare Epidemiology of America; Orlando, Florida; April 6, 2008 (abstract 478).

<sup>2</sup>These authors contributed equally to this article.

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### Article Title

## *Sphingomonas paucimobilis* Bloodstream Infections Associated with Contaminated Intravenous Fentanyl

### CME Questions

**1. Which of the following organisms is most likely to have been reported as a contaminant associated with betamethasone injection?**

- A. *Sphingomonas paucimobilis*
- B. *Serratia marcescens*
- C. *Pseudomonas putida*
- D. *Exophiala* spp.

**2. Which of the following is least likely to be an accurate description of *S. paucimobilis*?**

- A. Gram-positive
- B. Glucose-nonfermenting
- C. Yellow-pigmented
- D. Found in soil and water

**3. In this case series, which of the following was investigated as a source of exposure to fentanyl that resulted in *S. paucimobilis* bacteremia infection in patients?**

- A. Intravenous infusions
- B. Contrast agents
- C. Medications
- D. All of the above

**4. Which of the following strategies was recommended by the study authors to reduce the incidence of bacterial contamination by compounding pharmacies?**

- A. Inspect source of drugs before preparation
- B. End-product sterility testing
- C. Elimination of compounding pharmacies
- D. None of the above

### Activity Evaluation

<b>1. The activity supported the learning objectives.</b>				
Strongly Disagree				Strongly Agree
1	2	3	4	5
<b>2. The material was organized clearly for learning to occur.</b>				
Strongly Disagree				Strongly Agree
1	2	3	4	5
<b>3. The content learned from this activity will impact my practice.</b>				
Strongly Disagree				Strongly Agree
1	2	3	4	5
<b>4. The activity was presented objectively and free of commercial bias.</b>				
Strongly Disagree				Strongly Agree
1	2	3	4	5